

REMARKS

Claims 1-30 are pending in the present application. Claims 1, 11, 21, and 25 are amended. Reconsideration of the claims is respectfully requested.

Amendments are made to the specification to include a reference number describing an element originally presented in the drawings. No new matter is added by any of the amendments to the specification.

I. Declaration

The Office Action states that the declaration is defective because it does not identify the mailing address of each inventor. Applicant respectfully disagrees. The declaration clearly designates a residence address, with ZIP Code, for the sole inventor. This address is a perfectly valid mailing address. Furthermore, a full mailing address is provided for LSI Logic Corporation. The inventor may receive mail at this address as well. Therefore, Applicant respectfully submits that the originally filed declaration is not defective. A highlighted copy of the originally filed declaration is provided for inspection by the Examiner.

II. Objection to the Drawings

The Office Action objects to the drawings, because a reference sign is not mentioned in the description. The specification is hereby amended to include the reference number 142 from Figure 1. Therefore, Applicant respectfully requests withdrawal of the objection to the drawings.

III. 35 U.S.C. § 102, Anticipation

The Office Action rejects claims 1-30 under 35 U.S.C. § 102 as being anticipated by *Kocol et al.* (U.S. Patent No. 4,387,441). This rejection is respectfully traversed.

Kocol teaches a data processing system wherein at least one subsystem has a local memory and a mailbox memory within the local memory for storing header information.

The cited portion of Kocol states:

That is, when one of the subsystems 24 requests data from another of the subsystems 24, that request, in the form of a header-only message, includes the local memory address at

which the requested data is to be stored in the local memory of the requesting subsystem.

Kacol, col. 35, lines 9-13.

Referring first to the BASE register 366, HNXT register 368, LMIT register 376 and FNXT register 378, these registers control the operation of the mailbox 350 as messages are received by the associated subsystem. The BASE and LMIT registers are initially loaded by the processor of the associated subsystem by way of the P-M bus during the initialization of the subsystem. In addition, the HNXT register 368 and the FNXT register 378 are loaded with the same value as the BASE register during initialization.

DMA OPERATION--RECEIVING MESSAGES

When a message is received by the system interface chip 136 in the system bus interface, and is passed through the message control circuit 144, the header (or header portion of a header and data message) is stored in the mailbox 350 in accordance with the information stored in the BASE, LMIT, HNXT and FNXT registers. The input address counter 392 is initially loaded with the same address as that in the HNXT register 368. As each byte of data is received from the message control circuit 144, the input address counter 392 is incremented, and its address is provided to the P-M bus in order to store each word of the message in a local memory address location in the mailbox 350. In addition, the output of the input address counter 392 is compared to the value in the FNXT register 378 by the compare circuit 386. When the signal FLB@0 at the output of compare circuit 386 indicates that the input address counter 392 has reached the FNXT address within the mailbox (see FIG. 21), the mailbox 350 has been completely filled and there is no remaining room for the header message. Generally, the message in such a circumstance will be aborted or rejected and the HNXT register 368 will not be incremented to the next available entry address. If, by chance, input address counter 392 has reached the FNXT address but there are so few bytes left in the message that they are all temporarily buffered in the message control circuit 144, the control for the DMA will permit the DMA to store the message up to the FNXT address, and when the first entry at the FNXT address is later accessed by the processor, the DMA will continue to store the remaining bytes (then stored in the buffers within

the message control circuit 144) into the mailbox, and then increment the HNXT register 368.

Kocol, col. 36, lines 1-37. The mailbox scheme of Kocol places received message header information in the mailbox to eliminate processor intervention as each message is received. The BASE and LMIT pointers are used to locate the mailbox in system memory and are not involved in the control, generation, or checking of CRC information.

The only connection Kocol has with CRC generation and checking is the use of CRC for protection of the messages sent serially between subsystem elements of the data processing system. Additionally, the CRC information that is transmitted and received serially is not stored in the system implemented in Kocol. Rather, CRC information is implemented and utilized just as it is in other serial bus protocol implementations, such as Fibre Channel, FDDI, and Infiniband. CRC information is generated and transmitted for all messages sent from a subsystem and is received and checked for all messages received by a subsystem.

In contradistinction, the present invention determines whether a request address is within a generate address range and sends generate information to a hardware computation engine in response to the request address being within a generate address range. Claim 1 recites:

1. A method for protecting a data transfer, comprising:
 - receiving a data transfer request, wherein the data transfer request comprises a request address;
 - determining whether the request address is within a generate address range;
 - sending generate information to a hardware computation engine in response to the request address being within the generate address range;
 - receiving a cyclical redundancy check value from the hardware computation engine; and
 - storing the cyclical redundancy check value.

Kocol does not teach or suggest determining whether a request address is within a generate address range. Furthermore, *Kocol* teaches generating CRC information for all messages sent, rather than sending generate information to a hardware computation engine in response to the request address being within a generate range, as in the presently claimed invention.

Independent claim 21 recites subject matter addressed above with respect to claim 1 and is allowable for the same reasons. Since claims 2-10 and 22-24 depend from claims 1 and 21, the same distinctions between Kocol and the invention recited in claims 1 and 21 apply for these claims. Additionally, claims 2-10 and 22-24 recite other additional combinations of features not suggested by the reference.

Claim 11 recites:

11. (Currently Amended): A method for protecting a data transfer, comprising:
receiving a data transfer request, wherein the data transfer request comprises a request address;
determining whether the request address is within a check address range;
sending check information to a hardware computation engine in response to the request address being within the check address range; and
receiving a cyclical redundancy check result from the hardware computation engine.

Kocol does not teach or suggest determining whether a request address is within a check address range. Furthermore, *Kocol* teaches generating CRC information for all received messages, rather than sending check information to a hardware computation engine **in response to the request address being within a check address range**, as in the presently claimed invention.

Independent claim 25 recites subject matter addressed above with respect to claim 11 and is allowable for the same reasons. Since claims 12-20 and 26-30 depend from claims 11 and 25, the same distinctions between Kocol and the invention recited in claims 11 and 25 apply for these claims. Additionally, claims 12-20 and 26-30 recite other additional combinations of features not suggested by the reference.

Therefore, Applicant respectfully requests withdrawal of the rejection of claims 1-30 under 35 U.S.C. § 102.

Furthermore, Kocol does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. *Kocol* actually teaches away from the presently claimed invention because it teaches generating or checking CRC information for every message sent or received, as opposed to monitoring for address ranges and generating or checking CRC information in response to a request address being within a predetermined range, as in the presently claimed invention. Absent the

Office Action pointing out some teaching or incentive to implement *Kocol* to monitor for request addresses, one of ordinary skill in the art would not be led to modify *Kocol* to reach the present invention when the reference is examined as a whole. Absent some teaching, suggestion, or incentive to modify *Kocol* in this manner, the presently claimed invention can be reached only through an improper use of hindsight using Applicants' disclosure as a template to make the necessary changes to reach the claimed invention.

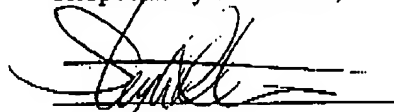
IV. Conclusion

It is respectfully urged that the subject application is patentable over the prior art of record and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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